

## CLAIMS

In the claims

1, A programmable communications receiver having multi-level priority sampling including a plurality of memory registers each register having a unique memory location and at least two of the memory registers having priority levels associated therewith, said priority levels being ranked whereby one priority level defines a higher priority than another; frequency entry means whereby a user may selectively enter frequencies into each of the memory registers according to the designation and priority level thereof; control means for periodically switching the receiver to each priority frequency programmed into the memory registers in response to a predetermined sequence, the control means including means for maintaining the receiver on any frequency in response to a presence of signal from a detector means; means for detecting the presence of a signal on a frequency to which the control means has switched the receiver whereby the control means maintains the receiver on the switched frequency when the presence of a signal is detected; the predetermined sequence including the continued periodic switching of the receiver to all designated frequencies having priority rankings higher than any frequency to which the control means is maintaining the receiver, the control means maintaining the receiver on any such higher priority frequency in response to a presence of signal from the detector means associated with such higher priority frequency whereby the receiver may monitor activity on multiple level priority

frequencies substantially instantaneously switching the receiver to, and maintaining a listening watch on, the highest priority frequency currently in use.

2. The programmable communications receiver of Claim 1 including a broadcast receiver; the frequency entry means including means whereby the user may enter a broadcast frequency to which the receiver shall be tuned until otherwise interrupted by the presence of a signal on one of the multiple level priority communications frequency.

3. The programmable communications receiver of Claim 2 including scanner means whereby one of the communications and broadcast receivers is automatically switched by the control means sequentially to each frequency defined within a range for frequencies, means for pausing the sequential switching in response to a signal present from the detect means, the control means continuing to periodically switch the communications receiver according to the predetermined sequence whereby the communications or broadcast scanning shall be interrupted by the presence of a signal on one of the multiple priority communications frequency.

4. The programmable communications receiver of Claim 3 whereby the periodic switching of the communications receiver according to the predetermined sequence is conducted in the background whereby no interruption to reception of broadcast signals occurs unless the presence of a signal is detected on one of the communications priority frequency.

5. The programmable communications receiver of Claim 1 including means for blocking the receiver speaker and headphone audio during each periodic interval

where the control means is sampling priority frequencies according to the predetermined sequence by correspondingly momentarily switching the communications receiver to each such frequency whereby such sampling does not significantly distract from reception on another active communications receiver frequency.

5        6. The programmable communications receiver of Claim 2 including display means operatively interconnected to the control means and frequency entry means to allow the user to view the frequency being entered and the identity and priority of the designated frequency and to view which of said designated frequencies is active when the receiver is being maintained on an active priority frequency and to view the priority  
10 level thereof.

7. The programmable communications receiver of Claim 1 wherein one designated frequency is assigned a high level of priority and wherein the remaining designated channels are assigned an identical lower priority whereby when any of the lower equal level priority channels is active, the control means shall, according to the predetermined sequence, only periodically switch to the single high level frequency to determine whether such frequency is active and to maintain the receiver on said higher priority frequency if it is.  
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8. The programmable communications receiver of Claim 1 in which the predetermined sequence checks for activity on the higher priority channels more frequently than the lower priority channels whereby user attention to activity on the highest such channel is further assured by such more frequent check for activity  
20 thereon.